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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,833	07/20/2006	Takeshi Yamataka	46884-5452	7936
55694 7590 08/18/2009 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209				
EXAMINER				
NGUYEN, HIEN NGOC				
ART UNIT		PAPER NUMBER		
3768				
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08/18/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/565,833

**Applicant(s)**

YAMANAKA ET AL.

**Examiner**

HIEN NGUYEN

**Art Unit**

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) 2 and 7 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 25 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S6108)  
Paper No(s)/Mail Date 02/05/2009  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

DETAILED ACTION

Applicant's amendment to claims 1, 2-6, cancellation of claims 2 and 7 are acknowledged and have been entered.

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-4, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 2003/0088162) in view of Miwa (US 5,676,142).

Regarding claim 1, Yamamoto discloses a light measuring device comprises:

- N pieces of measuring module with each having a single irradiating units for irradiating a scattering medium with light irradiated from a predetermined light irradiating position to measure internal information thereof non-invasively and a plurality of light detecting units for detecting light irradiated from the light irradiating unit and propagating through the inside of the scattering medium at predetermined light detecting positions;

(see [0023-0024] and Figs. 1-2). Examiner interprets each light source with plurality of light detectors is a piece.

- timing instruction means for instructing the light irradiating unit and the light detecting units included in each of the measuring modules, respectively, on an irradiation timing and a detection timing; (see [0026]). The system give instruction to turn on each irradiating unit and the detector detect the light when that irradiating unit turns on.
- in each of the N pieces of measuring modules, detection probes of the light detecting units are arranged around an irradiation probe of the light irradiating unit, and the irradiation probe and the detection probes are arranged so that each light detecting position has the same distance from the light irradiating position; (see Fig. 1, the light detectors arrange around an irradiation probe (light source) at the same distance). Examiner interprets irradiation probe and irradiating unit to be the same. Examiner interprets detecting probe and detecting unit to be the same.
- based on instruction signals from the timing instruction means, N pieces of the light irradiating units corresponding, respectively, to the N pieces of measuring modules are adapted to irradiate the scattering medium with the light successively at the different irradiation timings, and wherein each of the light detecting units is adapted to detect light at the detection timing synchronized with the irradiation timing of the corresponding light

irradiating unit; (see [0026], the system instruction to turn on light and detect the light).

However, Yamamoto does not explicitly disclose using pulse light, in the same field of endeavor, Miwa discloses using pulse light for time-resolved measuring scattering property (see col. 3, lines 1-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamamoto's apparatus to transmit pulse light and receive pulse light to measure scattering property in a human body as taught by Miwa because pulse light with predetermine wavelength is more effective in measure scattering property in a human body.

Regarding claim 3, it would have been obvious to one of ordinary skill in the art at the time of the invention that an photometric apparatus discloses by Yamamoto in claim 1 is capable of having an interval of irradiation timing between two of the light irradiating unit having successive irradiation timing to be 1usec or less. Light send out by each irradiating unit for a very short time to measure the scattering property. The system is control by processing unit and by the operator. The operator can adjust the system to turn on each irradiating unit and for how long. The operator can also adjust the system to have successive irradiation timing to be 1 usec or less. The operator can set this interval time to whatever value he/she feel as the best operation mode of the instrument. The device has all the components to perform this function.

Regarding claim 4, Yamamoto discloses:

- wherein N pieces of light sources are installed to supply pulse light, respectively, to N pieces of the light irradiating units; (see [0007]).

Regarding claim 6, Yamamoto discloses:

- an photometric instrument wherein part of a plurality of the light detecting unit is shared by a plurality of the measuring modules; (see Fig. 1, black dot and white dot). Examiner interprets each light detector (black dot) surrounding a light source (white dot) at the four corners is being share with it neighboring piece of the measuring module.

Regarding claim 8, Yamamoto discloses:

- wherein the N pieces of measuring modules are arranged closely to each other, or arranged in such a manner as to be overlapped partially with each other; (see Fig. 1, each of the piece is adjacent to each other and share light detector). Examiner interprets a light source (white dot) surround by 4 light detectors (black dot) as one piece of measuring module.

Regarding claim 9, Yamamoto discloses:

- each of the N pieces of measuring modules, the detection probes are arranged at each vertex of a regular polygonal shape centering on the irradiation probe; (see Fig. 1, the detection probes are arrange at each vertex of a square shape piece centering on the irradiation probe (the white dot is the light source/irradiation probe and the black dot at the four corner or vertex are light detector/detection probes)).

3. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 2003/0088162), in view of Miwa (US 5,676,142) and further in view of Tsunasawa et al. (JP Publication # 2001-337033).

Yamamoto and Miwa substantially disclose all claim limitations set forth in claim 1. However, they do not disclose wherein M pieces (M represents an integer of 1 or more to less than N) of light sources are installed to supply pulse light to a plurality of light irradiating units among N pieces of the light irradiating units. In the same field of endeavor, Tsunasawa discloses wherein M pieces (M represents an integer of 1 or more to less than N) of light sources are installed to supply pulse light to a plurality of light irradiating units among N pieces of the light irradiating units to reduce the number of light sources (see [0009-0011]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamamoto's device to include M pieces (M represents an integer of 1 or more to less than N) of light sources are installed to supply pulse light to a plurality of light irradiating units among N pieces of the light irradiating units as taught by Tsunasawa because this reduce the number of light sources require for the device.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HIEN NGUYEN whose telephone number is (571)270-7031. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. N./  
Examiner, Art Unit 3768

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768